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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,171	09/19/2003	Yakov Fleytman	6978-201/COA	1623
27572	7590	03/22/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			LEWIS, TISHA D	
			ART UNIT	PAPER NUMBER
			3681	

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/667,171

Applicant(s)

FLEYTMAN ET AL.

Examiner

TISHA D. LEWIS

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-8 is/are allowed.
- 6) ☒ Claim(s) 1, 9, 10, 12-15, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 11 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### **DETAILED ACTION**

The following is a first action on the merits of application serial no. 10/667,171, filed on September 19, 2003.

#### ***Information Disclosure Statement***

The information disclosure statement filed on September 19, 2003 has been acknowledged.

#### ***Specification***

The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. \_\_\_\_" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application. Since the parent application 09/689,401 has become patent no. 6,645,112, this should be included in the cross reference section of the specification.

#### ***Claim Objections***

Claims 8, 13 and 15 are objected to because of the following informalities:

-In the claim 8, line 2, "motor" should be changed to --four wheel drive-- since the vehicle was introduced in claim 6 as a four wheel drive vehicle and not a motor vehicle.

-In the claim 13, line 2, --gear-- should be inserted between "first" and ",".

-In the claim 15, line 8, "gears" should be changed to --gear--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9, 10, 12, 13, 15, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Azuma et al ('297). As to claim 1, Azuma et al discloses a power transfer assembly for use in a motor vehicle having a powertrain and first and second drivelines with;

a first output shaft (94) adapted to transmit drive torque from the powertrain to the first driveline,

a second output shaft (96) adapted to transmit drive torque to the second driveline,

a torque transfer mechanism (30) for transferring drive torque from the first shaft to the second shaft by a first gearset and a second gearset having a worm (55) meshed with a worm gear (52) fixed for rotation with a component (32) of the first gearset, and an electric motor (56) driving the worm wherein the worm has 4 or 5 teeth which is less than twenty-four teeth.

As to claim 9, Azuma et al discloses a power transfer assembly used as a transfer case for a four wheel drive vehicle having a powertrain and first and second drivelines with;

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a first output shaft (94) adapted to transmit drive torque from the powertrain to the first driveline,

a second output shaft (96) adapted to transmit drive torque to the second driveline,

a geared differential unit having a first gear (36) driven by the first shaft, a second gear (36) driving the second shaft, a third gear (34) meshed with the first and second gears and a carrier (32) rotatably supporting the third gear,

a worm gearset having a worm (55) that is meshed with an enveloping worm gear (52) fixed for rotation with the carrier and having between 4 to 5 teeth which is less than twenty-four teeth, and

a motor (56) for driving the worm.

As to claim 10, Azuma et al discloses a control system (106) for controlling variable speed actuation of the motor to vary relative rotation between the first and second output shafts through the carrier.

As to claim 12, Azuma et al discloses the worm gear being self-locking since the carrier is held against rotation by being fixed to the worm gear.

As to claim 13, Azuma et al discloses the geared differential having a bevel gearset with a first side gear (36) being the first gear, a second side gear (36) being the second gear and a pinion (34) as the third gear.

As to claim 15, Azuma et al discloses a power transfer assembly for a four wheel drive vehicle having a powertrain and first and second drivelines with;

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a first output shaft (94) adapted to transmit drive torque from the powertrain to the first driveline,

a second output shaft (96) adapted to transmit drive torque to the second driveline,

a reduction unit (reducing speed of second output shaft) having a input gear (36) driven by the first shaft, a output gear (36) driving the second shaft, a reaction gear (34) meshed with the input and output gears and a carrier (32) rotatably supporting the reaction gear,

a self-locking worm gearset having a worm (55) that is meshed with an enveloping worm gear (52) fixed for rotation with the carrier, and

a motor (56) for driving the worm to vary the relative rotation between the first and second shafts through the carrier for controlling torque transmitted from the input to the output gear.

As to claim 17, Azuma et al discloses the worm gear being self-locking since the carrier is held against rotation by being fixed to the worm gear.

As to claim 18, Azuma et al discloses the worm gear having between 4 to 5 teeth which is less than twenty-four teeth.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma et al in view of Truong ('101). Azuma et al discloses a power transfer assembly used as a transfer case for a four wheel drive vehicle having a powertrain and first and second drivelines with;

a first output shaft (94) adapted to transmit drive torque from the powertrain to the first driveline,

a second output shaft (96) adapted to transmit drive torque to the second driveline,

a geared differential unit having a first gear (36) driven by the first shaft, a second gear (36) driving the second shaft, a third gear (34) meshed with the first and second gears and a carrier (32) rotatably supporting the third gear,

a worm gearset having a worm (55) that is meshed with an enveloping worm gear (52) fixed for rotation with the carrier and having between 4 to 5 teeth which is less than twenty-four teeth, and

a motor (56) for driving the worm.

but Azuma does not disclose the differential unit as a planetary system.

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Truong discloses a gearbox for locking between two wheel and four wheel drive using a differential unit (Figure 16) having a first sun gear driven by a first output shaft, a second sun gear driven by a second output shaft, planet gears meshed with the sun gears and a planet carrier supporting the planet gears and wherein a worm gear (21, 22, 37 or 38) is fixed to the carrier.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the differential unit of Azuma with a planetary system in view of Truong to provide more of a variable torque ratio output.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,645,112. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claim limitations of the present invention broadly claim the limitations of the patent having a transfer case for use in a four wheel drive



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vehicle having a powertrain and first and second drivelines with a first output shaft transmitting torque from the powertrain to the first driveline, a second output shaft transmitting torque to the second driveline, a differential (reduction, geared) unit having a first sun gear, a second sun gear and a planet gear, a bevel gearset having a first side gear, a second side gear and a pinion gear, a worm gearset having a worm meshed with a worm gear and driven by an electric motor, a controller for controlling variable actuation of the motor in response to sensors and the worm gear being self-locking.

### ***Allowable Subject Matter***

Claims 2-8 are allowed. Claims 11 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claims will only be allowable upon filing of a terminal disclaimer as stated above.

### **FACSIMILE TRANSMISSION**

Submission of your response by facsimile transmission is encouraged. Group 3600's facsimile number is **(703) 872-9326 before final and 703-872-9327 after final**. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence **not** permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check **should not be** submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

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(Date)

Typed or printed name of person signing this certificate:

\_\_\_\_\_

\_\_\_\_\_

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Fleytman et al ('652), ('167) and ('213) are cited as being co-patents with the present invention having a worm gearset used in four wheel drive vehicles.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to TISHA D. LEWIS whose telephone number is 703-305-0921. The examiner can normally be reached on M-Thur 8 AM TO 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHARLES A. MARMOR can be reached on 703-308-0830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tdl  
March 18, 2004

  
Tisha D. Lewis  
Primary Examiner  
Au 3681 3/18/04